



|                 |                 |
|-----------------|-----------------|
| WEAR            | <b>ABNORMAL</b> |
| CONTAMINATION   | <b>NORMAL</b>   |
| FLUID CONDITION | <b>ABNORMAL</b> |

Machine Id  
**JOHN DEERE 470G 1FF470GXJJF235253**  
 Component  
**Diesel Engine**  
 Fluid  
**JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (--- QTS)**

### RECOMMENDATION

Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. ( Customer Sample Comment: Oil pressure low codes, changed oil and pressure and into range )

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>JR0189202</b>   | JR0113752   | JR0087241   |
| Sample Date    |     | Client Info |           | <b>16 Nov 2023</b> | 21 Dec 2021 | 24 Jun 2021 |
| Machine Age    | hrs | Client Info |           | <b>5848</b>        | 3536        | 0           |
| Oil Age        | hrs | Client Info |           | <b>1200</b>        | 500         | 500         |
| Filter Age     | hrs | Client Info |           | <b>1200</b>        | 500         | 500         |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | Changed     | Changed     |
| Filter Changed |     | Client Info |           | <b>Changed</b>     | Changed     | Changed     |
| Sample Status  |     |             |           | <b>ABNORMAL</b>    | ABNORMAL    | ABNORMAL    |

### WEAR

Cylinder, crank, or cam shaft wear is indicated. Bearing and/or bushing wear is indicated.

|              |        |             |      |              |      |      |
|--------------|--------|-------------|------|--------------|------|------|
| Iron         | ppm    | ASTM D5185m | >51  | <b>▲ 120</b> | ▲ 71 | 39   |
| Chromium     | ppm    | ASTM D5185m | >11  | <b>2</b>     | 1    | <1   |
| Nickel       | ppm    | ASTM D5185m | >5   | <b>&lt;1</b> | 0    | <1   |
| Titanium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | <1   | <1   |
| Silver       | ppm    | ASTM D5185m | >3   | <b>&lt;1</b> | <1   | 0    |
| Aluminum     | ppm    | ASTM D5185m | >31  | <b>7</b>     | 7    | 5    |
| Lead         | ppm    | ASTM D5185m | >26  | <b>▲ 159</b> | ▲ 76 | ▲ 39 |
| Copper       | ppm    | ASTM D5185m | >26  | <b>▲ 45</b>  | ▲ 34 | 12   |
| Tin          | ppm    | ASTM D5185m | >4   | <b>▲ 6</b>   | ▲ 5  | 4    |
| Vanadium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | <1   | <1   |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |

### CONTAMINATION

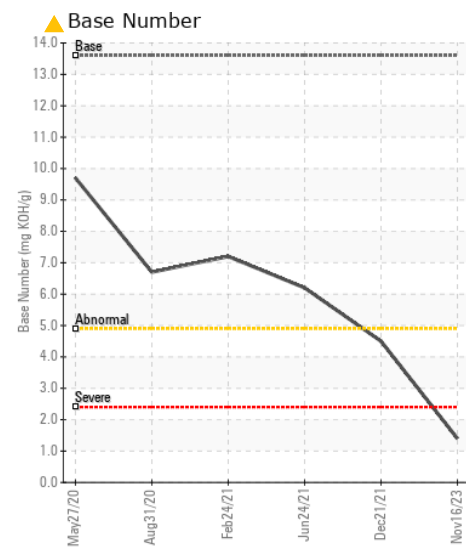
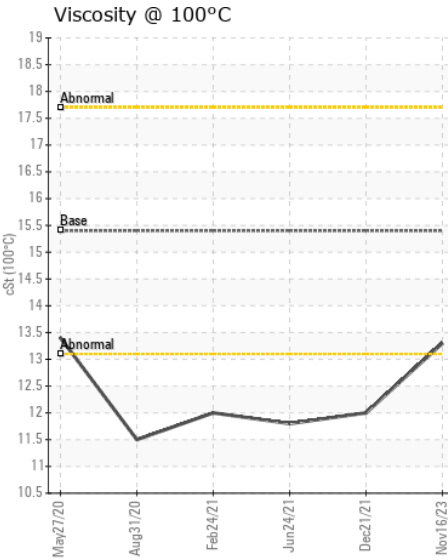
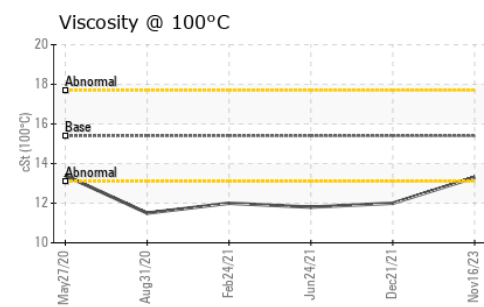
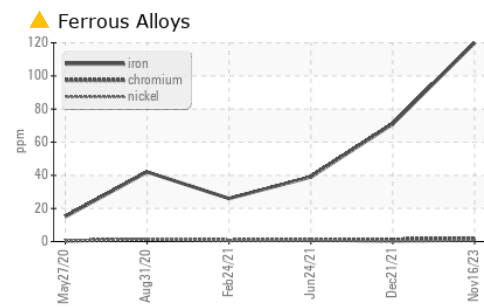
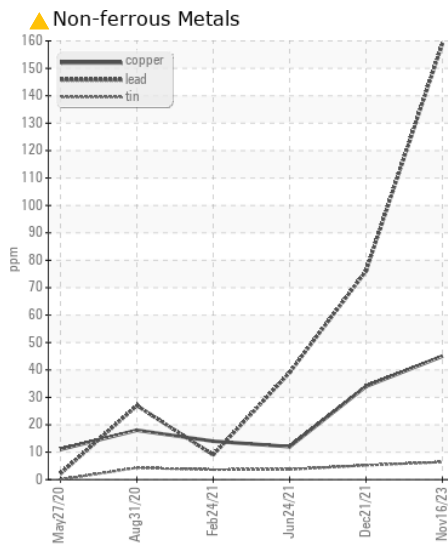
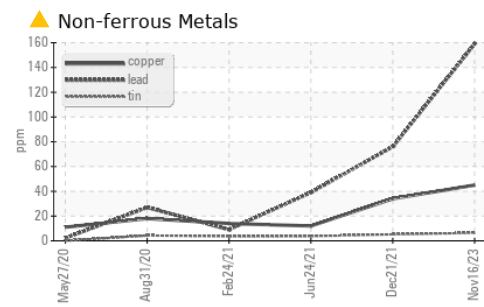
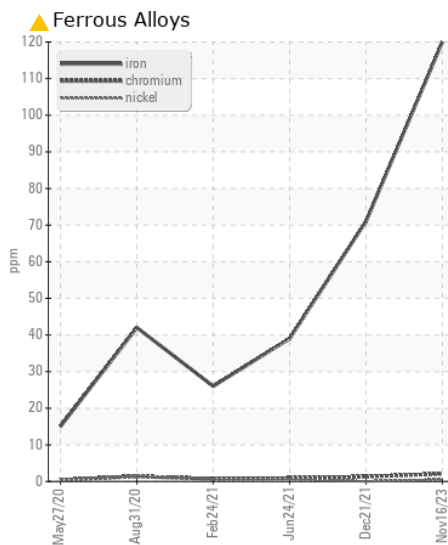
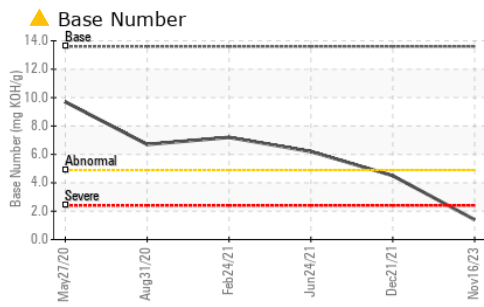
There is no indication of any contamination in the oil.

|                  |          |             |       |                |       |       |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon          | ppm      | ASTM D5185m | >22   | <b>19</b>      | 13    | 10    |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>19</b>      | 10    | 8     |
| Fuel             |          | WC Method   | >2.1  | <b>&lt;1.0</b> | <1.0  | <1.0  |
| Water            |          | WC Method   | >0.21 | <b>NEG</b>     | NEG   | NEG   |
| Glycol           |          | WC Method   |       | <b>NEG</b>     | NEG   | NEG   |
| Soot %           | %        | *ASTM D7844 | >3    | <b>1</b>       | 1     | 0.6   |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>20.8</b>    | 17    | 12.8  |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>39.0</b>    | 33.9  | 31.6  |
| Silt             | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Debris           | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Sand/Dirt        | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Appearance       | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | NORML |
| Odor             | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | NORML |
| Emulsified Water | scalar   | *Visual     | >0.21 | <b>NEG</b>     | NEG   | NEG   |

### FLUID CONDITION

The BN level is low. The condition of the oil is acceptable for the time in service.

|                  |          |             |      |              |      |      |
|------------------|----------|-------------|------|--------------|------|------|
| Sodium           | ppm      | ASTM D5185m | >31  | <b>37</b>    | 12   | 14   |
| Boron            | ppm      | ASTM D5185m |      | <b>20</b>    | 21   | 30   |
| Barium           | ppm      | ASTM D5185m |      | <b>0</b>     | <1   | 0    |
| Molybdenum       | ppm      | ASTM D5185m |      | <b>187</b>   | 252  | 248  |
| Manganese        | ppm      | ASTM D5185m |      | <b>2</b>     | 2    | <1   |
| Magnesium        | ppm      | ASTM D5185m |      | <b>717</b>   | 810  | 766  |
| Calcium          | ppm      | ASTM D5185m |      | <b>1384</b>  | 1509 | 1462 |
| Phosphorus       | ppm      | ASTM D5185m |      | <b>867</b>   | 874  | 821  |
| Zinc             | ppm      | ASTM D5185m |      | <b>1097</b>  | 1007 | 992  |
| Sulfur           | ppm      | ASTM D5185m |      | <b>2346</b>  | 2442 | 2289 |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25  | <b>54.6</b>  | 36.6 | 28.4 |
| Base Number (BN) | mg KOH/g | ASTM D2896  | 13.6 | <b>▲ 1.4</b> | 4.5  | 6.2  |
| Visc @ 100°C     | cSt      | ASTM D445   | 15.4 | <b>13.3</b>  | 12.0 | 11.8 |



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : JR0189202 **Received** : 22 Nov 2023  
**Lab Number** : 06014890 **Tested** : 23 Nov 2023  
**Unique Number** : 10754034 **Diagnosed** : 25 Nov 2023 - Don Baldrige  
**Test Package** : CONST ( Additional Tests: TBN )

**JRE - CHARLOTTE**  
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 CHARLOTTE, NC  
 US 28269

Contact: CHARLOTTE SHOP  
 myoung@jamesriverequipment.com

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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